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60/405,223 22 August 2002 (22.08.2002) US
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- (75) Inventors/Applicants (for US only): RAO, Velliyur, Nott, Mallikarjuna [US/US]; 1 Georgetown Avenue, Wilmington, DE 19809 (US). ROSENFELD, H., David [US/US]; 1927 Susquehannock Drive, Drumore, PA 17518 (US). SUBRAMONEY, Shekhar [IN/US]; 425 Stella Drive, Hockessin, DE 19707 (US). SUBRAMANIAN, Munirpallam, A. [US/US]; 20 Pratt Lane, Kennett Square, PA 19348 (US). SIEVERT, Allen, C. [US/US]; 215 Rhett Lane, Elkton, MD 21921 (US).
- (54) Title: PROCESS FOR THE PREPARATION OF 1,1,1,2,2-PENTAFLUOROETHANE
- (57) Abstract: A process for the preparation of pentafluoroethane is disclosed which involves contacting a mixture comprising hydrogen fluoride and at least one one starting material selected from haloethanes of the formula  $CX_3CHX_2$  and haloethenes of the formula  $CX_2=CHX$ , where each X is independently selected from the group consisting of F and Cl (provided that no more than four of X are F), with a fluorination catalyst in a reaction zone to produce a product mixture comprising HF, HCl, pentafluoroethane, underfluorinated halogenated hydrocarbon intermediates and less than 0.2 mole percent chloropentafluoroethane based on the total moles of halogenated hydrocarbons in the product mixture. The process is characterized by the fluorination catalyst comprising (i) a crystalline cobalt-substituted alpha-chromium oxide where from about 0.05 atom % to about 6 atom % of the chromium atoms in the alpha-chromium oxide lattice are replaced by trivalent cobalt ( $Co^{+3}$ ) and/or (ii) a fluorinated crystalline oxide of (i).
- (74) Agent: HEISER, David, E.; E.I. DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, 4417 Lancaster Pike, Wilmington, DE 19805 (US).
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## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	EP 0 641 598 A (SHOWA DENKO KK) 8 March 1995 (1995-03-08) claims ---	1,2
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Y	EP 1 038 858 A (DAIKIN IND LTD) 27 September 2000 (2000-09-27) page 9, line 45; claims 1,2,10; example 3 ---	1,2
Y	WO 98 10862 A (ICI PLC) 19 March 1998 (1998-03-19) page 7, line 1 - line 6; page 8, line 3 - line 5; claims 1-6 --- -/--	1,2

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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